

REMARKS

I. Introduction

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 1-4 Under 35 U.S.C. § 102

Claims 1-4 were rejected under 35 U.S.C. § 102(b) as being anticipated by Sunakawa et al. (JP 2000-315503). In addition, claims 1, 2 and 4 were rejected under 35 U.S.C. § 102(b) as being anticipated by Watanabe et al. (JP 2002-319398). Applicant respectfully submits that Sunakawa et al. and Watanabe et al. both fail to anticipate the pending claims for at least the following reasons.

With regard to the present invention, claim 1 recites, in-part, a non-aqueous electrolyte rechargeable battery comprising (a) a positive electrode capable of charging and discharging lithium, wherein said positive electrode contains a mixture of a first positive electrode active material and a second positive electrode active material, wherein said second positive electrode active material comprises $\text{Li}_x\text{Co}_{1-y-z}\text{Mg}_y\text{Al}_z\text{O}_2$ where $1 \leq x \leq 1.03$, $0.005 \leq y \leq 0.1$ and $0.001 \leq z < 0.02$.

In contrast to the present invention, Neither Sunakawa nor Watanabe disclose a mixture in which the second positive electrode active material contains less than 0.02 Al. The Examiner directs us to sections 0015-0016 of Sunakawa which teach a first lithium-manganese system multiple oxide with the formula $\text{Li}_x\text{Mn}_{2-y}\text{M1}_y\text{O}_{4+z}$ in which M1 is at least one sort of elements chosen from the group of Al, Co, Ni, Mg and Fe. Also disclosed is a second oxide, with formula

$\text{Li}_a\text{M}_2\text{bNi}_c\text{Co}_d\text{O}_2$ in which M2 is at least one sort of elements chosen from the group which consists of Al, Mn, Mg and Ti, wherein $0.02 \leq b \leq 0.3$. Thus, as is shown here, the second positive electrode active material of the present invention which comprises $\text{Li}_x\text{Co}_{1-y-z}\text{Mg}_y\text{Al}_z\text{O}_2$ where, $0.001 \leq z < 0.02$ falls outside the scope of both the first and the second oxides disclosed in Sunakawa, because in the present invention the molar amount of Al, z, is *less than* 0.02, **not equal to or greater than** 0.02, as is disclosed in Sunakawa.

In Watanabe, the Examiner directs us to the mixture of a first positive electrode active material comprising $\text{Li}_x\text{Co}_y\text{M}_w\text{O}_z$, in which M is at least one of Al, Cu, Zn, Mg, Ca, Ba and Sr, and $0.02 \leq w \leq 0.15$. Also disclosed is a second positive electrode active material comprising $\text{Li}_a\text{Ni}_b\text{M}'_c\text{O}_d$, in which M' is at least one of Co, Mn, Cr, Fe, V, or Al, and $0.02 \leq c \leq 0.5$. Just as in Sunakawa, the second positive electrode active material of the present invention which comprises $\text{Li}_x\text{Co}_{1-y-z}\text{Mg}_y\text{Al}_z\text{O}_2$ where, $0.001 \leq z < 0.02$ falls outside the scope of both the first and the second oxides disclosed in Watanabe, because the molar amount of Al, is *less than* 0.02, **not equal to or greater than** 0.02, as is disclosed in Watanabe.

Anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities", *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986). Thus, at least for the foregoing reasons, it is clear that neither Sunakawa nor Watanabe anticipate any of claims 1 to 4.

Furthermore, Applicants direct the Examiner to MPEP § 2131.03 Anticipation of Ranges which states, "If the claims are directed to a narrow range, the reference teaches a broad range,

and there is evidence of unexpected results within the claimed narrow range...it may be reasonable to conclude that the narrow range is not disclosed with “sufficient specificity” to constitute an anticipation of the claims.”

In the present case, it is shown that the second positive electrode active material of the present invention inhibits the resolution of Mn from the first positive electrode active material (see, page 6, lines 9-18). Furthermore, Mg stabilizes the structure and improves the heat resistance of the second positive electrode active material (see, page 9, lines 18 to page 10, line 9). Moreover, Al can further enhance the effects of Mg to stabilize the structure and improve the heat resistance of the second positive electrode active material (see, page 10, line 15 to page 11, line 4).

In contrast, neither Sunakawa nor Watanabe mentions these effects of utilizing both Al and Mg in the positive electrode active materials. Neither do the references disclose or suggest the interaction of Mg and Al as demonstrated in Tables 1 and 2 of the specification.

As the ranges of the elements disclosed in claim 1 are outside the scope of the prior art, the rejection is improper. Therefore, it appears that claim 1 of the present invention is not anticipated by the prior art and the rejection under § 102(b) should be withdrawn. Accordingly, claim 1 and all pending dependent claims thereon should be considered allowable.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

IV. Conclusion

Having responded to all open issues set forth in the Office Action, it is respectfully submitted that all claims are in condition for allowance.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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